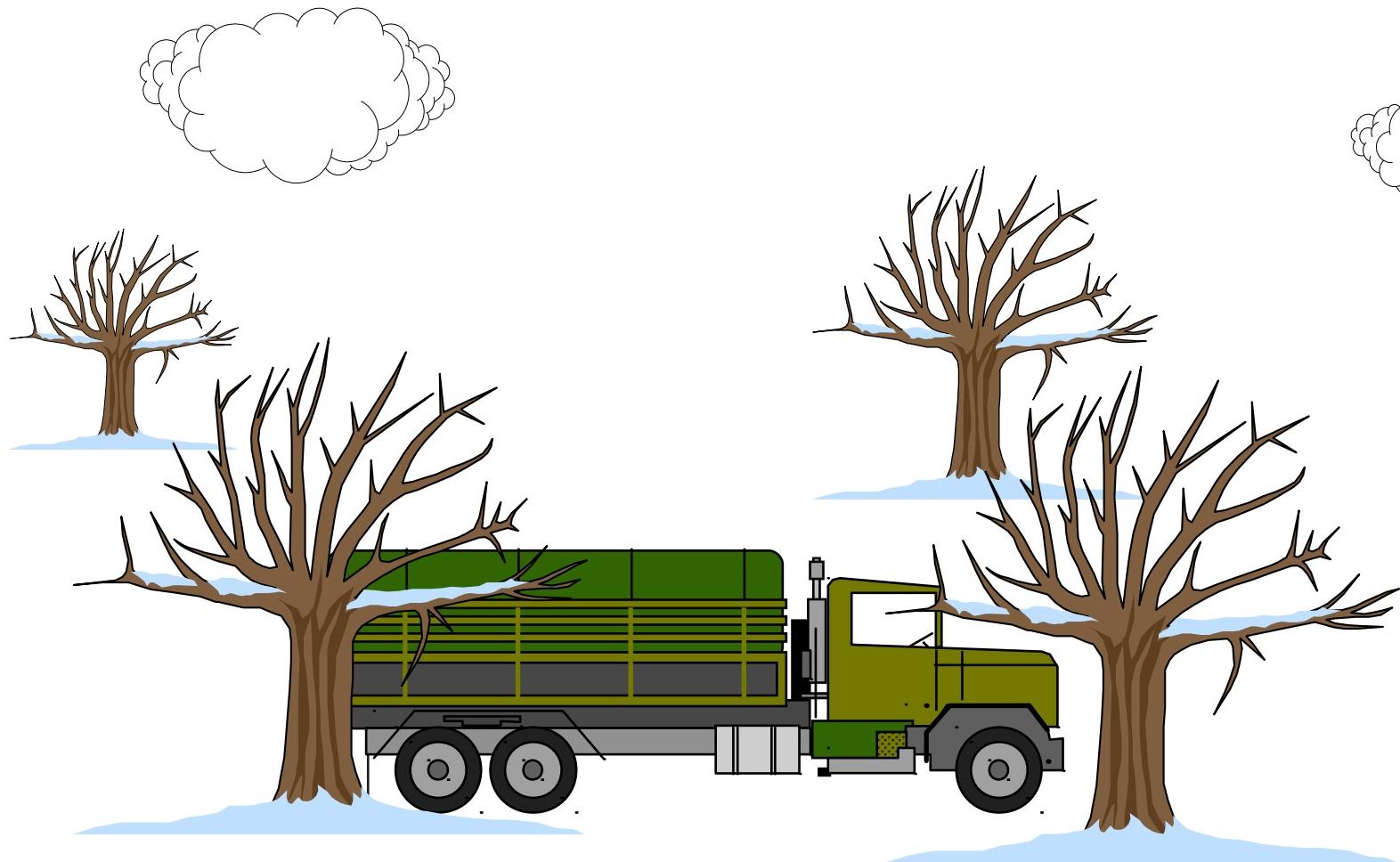
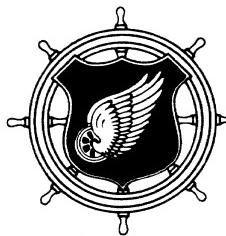


DRIVE A CARGO VEHICLE ON/OFF ROAD IN CONVOY



Objective



Drive cargo vehicle on side and unimproved roads in convoy.

Given a classroom environment, FM21-305,a loaded 5-ton cargo vehicle technical manual, and an approved convoy route road course during daylight hours. You must safely operate cargo vehicle in convoy on/off roadway during day or night.

You must perform all required maneuvers on/off roadway during daylight hours without causing personal injury or damage to equipment IAW FM 21-305 and vehicle technical manual.

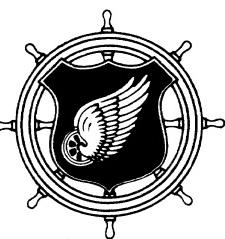


DRIVE A CARGO VEHICLE ON/OFF ROAD IN CONVOY

Drive Vehicle in Convoy

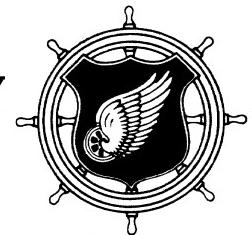
Start the engine on receiving the signal or order from the march unit commander.

- Set the vehicle in motion on receiving signal of order to move out.
- Operate the vehicle at the prescribed speed and within the proper interval between vehicle.
- Acknowledge the hand signals by adjusting speed, interval, and position accordingly.
- Relay the signals received from the march commander.



Vehicle Failures

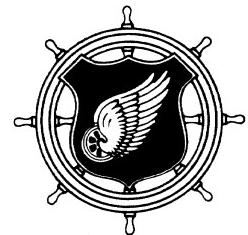
- Signal a stop and pull vehicle behind you to proceed.
- Correct trouble, if possible, and fall back in column at one of the halts. If trouble cannot be repaired, wait for the trail officer who is positioned at the rear of the column.



DRIVE A CARGO VEHICLE ON/OFF ROAD IN CONVOY

Vehicle Halts.

- Rest and relief
- Refueling
- Maintenance
- Inspect vehicle and loads



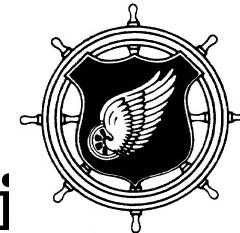
DRIVE A CARGO VEHICLE ON/OFF ROAD IN CONVOY

NATO Convoy Flags

Blue-lead vehicle.

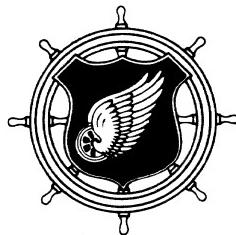
Green-last vehicle.

White and black diagonal-vehicle of
column commander



Command and Control Communication

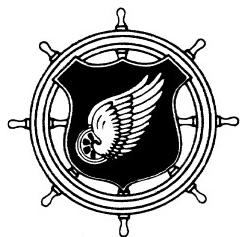
- Visual signals (involve hand and arm signals, flashlights, flags, headlight, and pyrotechnic signals).
- Sound signals (whistles, horns, and verbal messages).
- Radio is the best way to communicate during a road march



DRIVE A CARGO VEHICLE ON/OFF ROAD IN CONVOY

Operate Central Tire Inflation System (CTIS) on M939A2 series vehicle.

- Selector panel
- Highway(HWY)
- Cross-country (X-C)
- Sand
- Emergency(EMER)
- Run-flat
- Amber warning light
- Electronic control Unit (ECU)



DRIVE A CARGO VEHICLE ON/OFF ROAD IN CONVOY

Operate Central Inflation System on M939A2 series vehicle.

CTIS integration with air brake system

-Start the engine

The CTIS will automatically go to the highway mode when the vehicle is started

-Place the vehicle in motion

-depress the cross-country mode (X-C) button

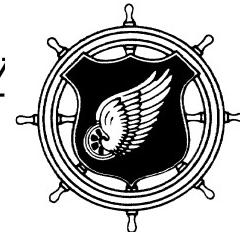
-depress the emergency mode button

-depress the flat-mode button

drive Vehicle on side roads and

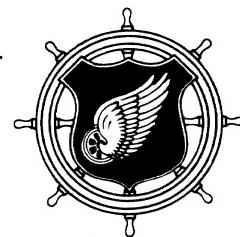
DRIVE A CARGO VEHICLE ON/OFF ROAD IN CONVOY

Operate Central Tire Inflation System on M939A2 series vehicle.

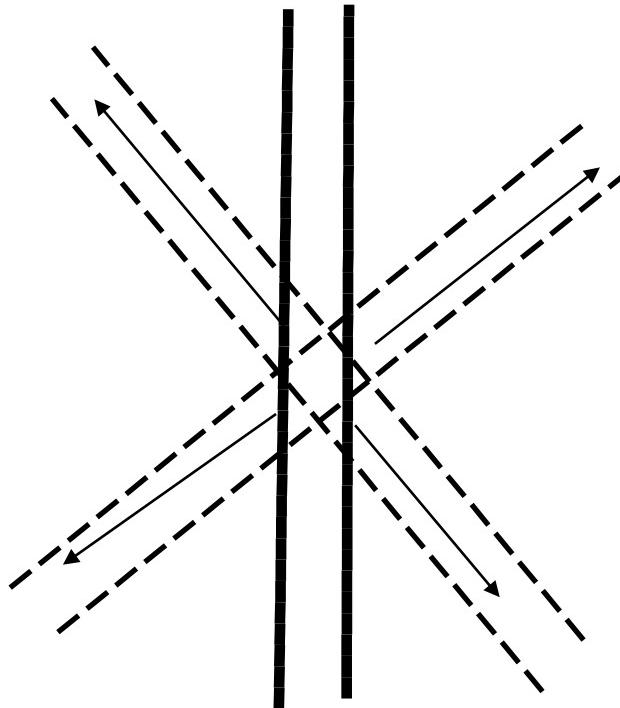


Transmission driving range selection.

- “R” (reverse) easy grades clear of traffic with ground
- “N” (neutral)
- “1-5” (drive) Good roads, grades, traffic conditions.
- “1-4” (fourth) Moderate grades, heavy traffic, restricted speed limits.
- “1-3”(third) Moderate grades, heavy traffic, restricted speed limits.
- “1-2” (second) Steep grades, heavy traffic, rough terrain.
- “1” (first) Starting heavy loads, extreme grades, rough terrain.



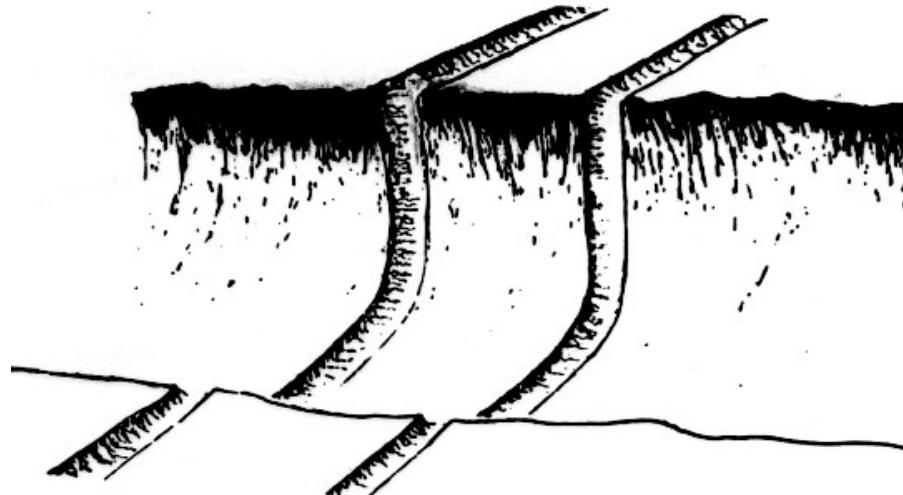
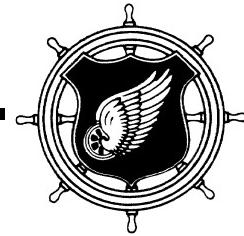
Shallow Ditches



Transfer case shift lever to LO
Select 1st or 2nd gear
Approach slowly at oblique angle (45 degrees)

DRIVE A CARGO VEHICLE ON/OFF ROAD IN CONVOY

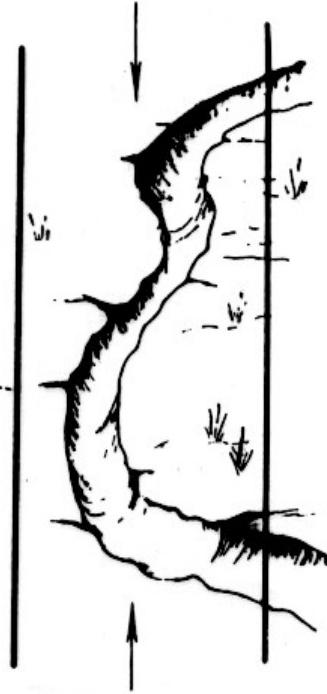
Deep Ditches



- Stop, check sides of bank for steepness
- Cut away at tops of banks
- Transfer case shift lever to LO, or four-wheel drive.
 - Place the vehicle into the lowest forward gear and four-wheel drive.
 - Approach at an angle.
 - Accelerate the vehicle enough to keep it rolling as it goes up the other side



Gullies and Ravines



- Look carefully, examine both banks
- If water is in ravine, check the depth
- Set transfer case shift lever to LO



Gullies and Ravines

Place transmission in 1st gear

Slowly enter at right angle to edge

Ease front wheels into gully using foot brake

Ensure front wheels strike the bottom at the same time

Accelerate as wheels hit the bottom



Wooded Areas

- Avoid stumps
- Watch for low hanging limbs
- Leaves can be slick
- Spare tire
- Pull in and adjust mirrors
- Use established trails
- Center vehicle on larger saplings
- Dense forest - drive close to edge
(concealment)



Rocky Terrain

- Check ground clearance
- Avoid large rocks
- Rocks can be slick when wet
- Have a good spare tire
- Use inter-axle differential lock
- Move very slowly



Streams

Check depth and bottom of fording site

Set transfer to low range and traction control to differential lock

Enter slowly, 1st gear, accelerate to 3-4 mph

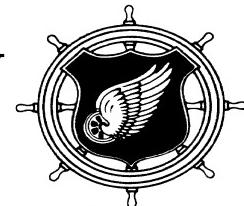
Do not stop in water

Dry brakes with light pressure on brake pedal

After dry, stop, apply and release park brake

Remove water and clean deposits from parts

Deliver vehicle to organizational maintenance



DRIVE A CARGO VEHICLE ON/OFF ROAD IN CONVOY

Swamps and Mud

- Low range; traction control to differential lock
- Use 1st or 2nd gear
- In deep ruts, keep wheels straight
- When necessary, use boards and brush for add
- If mud rolls up in front of tires, stop, back up and drive forward at a faster speed
- Wash out the brakes as soon as possible

DRIVE A CARGO VEHICLE ON/OFF ROAD IN CONVOY



Sandy or Dusty Areas

Reduce tire pressure

Drive at slow speed

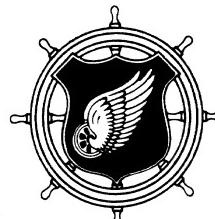
When starting on sand or soft ground;

start in 2nd or 3rd gear, accelerate gradually
maintain steady movement and avoid unnecessary shifting of gears

Anticipate and bypass difficult spots

Hit small stretches of soft sand at increased speed

Approach dunes at 90 degree angle



Sandy or Dusty Areas continued

- Follow tracks of preceding vehicle; extend distance and operate at low speed
- Watch air filter restriction indicator, gauges, and warning lights
- At stops, check and drain fuel-water separator
- Roll to a halt or brake gradually
- Park vehicle so it does not face into the wind
- Cover glass surfaces

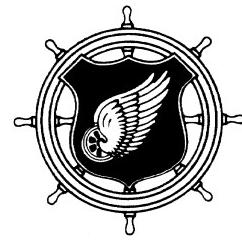
DRIVE A CARGO VEHICLE ON/OFF ROAD IN CONVOY



Parking Vehicle

Do not park vehicle on steep gr

DRIVE A CARGO VEHICLE ON/OFF ROAD IN CONVOY



Maintenance

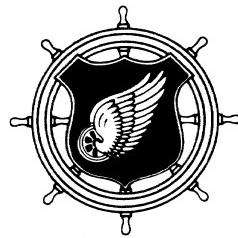
Clean mud off vehicle as soon as possible after driving off road

Do not hit axle breathers when cleaning

Clean mud from wheels, brakes, axles, universal joints, steering mechanism, and radiator

Make sure axle breather vent caps move freely and are not damaged by body

CAUTION: Do not direct high pressure water at any part of the vehicle that could easily be damaged



Snow and Ice

Snow and ice reduces traction even more than wet asphalt.

When on snow and ice, have chains or snow tires.

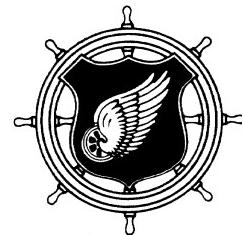
When roads are dangerous due to weather, drive with extra alertness and reduce speed according to conditions.

When road appears clear, watch for patches of ice.

Decks of bridges cool much more rapidly than roads.

Danger times are late afternoon, or after dark.

Three to eleven times greater distance is required to stop.



Night Driving

Two to three times more dangerous

Night vision reduced to a few hundred feet

Reflected light:

 100 ft. 1/4 as much light as objects 50 ft

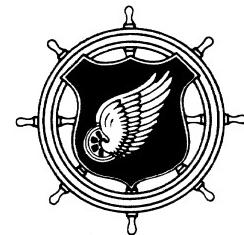
 200 ft. 1/16 as much light reflected

Hills and curves reduce vision greatly

Glare from headlights

Clean windshield

Twilight hours especially hazardous



Operate Lights

Turn dome light on/off

Turn panel lights on/off

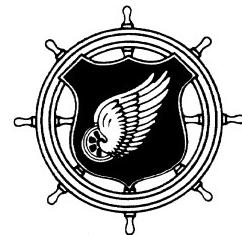
Turn parking lights on/off

Turn services lights on/off

Turn stoplights on/off

Turn clearance lights on/off

Summary



Controls and Indicators

Off-Road operation

Convoy operations

Maintenance of vehicle

Night driving

Operation of lights